

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

- 1           1.       (Previously Presented) A method comprising:  
2                   receiving, into a capacity planning tool, configuration information for at least one  
3       streaming media server, wherein the configuration information comprises a single file  
4       benchmark and a unique file benchmark for the at least one streaming media server;  
5                   receiving, into said capacity planning tool, workload information for a workload  
6       of client accesses of streaming media files from a server; and  
7                   said capacity planning tool evaluating, based on said configuration information, a  
8       capacity of the at least one streaming media server for supporting the workload.
  
- 1           2.       (Original) The method of claim 1 wherein said configuration information includes  
2       identification of size of memory of said at least one streaming media server.
  
- 1           3.       (Original) The method of claim 2 wherein said configuration information further  
2       includes disk configuration of said at least one streaming media server.
  
- 1           4.       (Original) The method of claim 1 wherein said workload information includes  
2       identification of number of concurrent client accesses of said streaming media files over a period  
3       of time.
  
- 1           5.       (Original) The method of claim 4 wherein said workload information further  
2       includes identification of a corresponding encoding bit rate of each of said streaming media files  
3       accessed.
  
- 1           6.       (Original) The method of claim 1 wherein said workload information comprises  
2       information from an access log collected over a period of time.

1           7.       (Original) The method of claim 1 wherein said evaluating comprises:  
2                    computing a cost corresponding to resources of said at least one streaming media  
3 server that are consumed in supporting the workload.

1           8.       (Original) The method of claim 7 wherein said computing said cost comprises:  
2                    computing a cost of consumed resources for a stream in said workload having a  
3 memory access to a streaming media file; and  
4                    computing a cost of consumed resources for a stream in said workload having a  
5 disk access to a streaming media file.

1           9.       (Original) The method of claim 1 wherein said evaluating comprises:  
2                    computing a service demand for said at least one streaming media server  
3 supporting said workload.

1           10.     (Previously Presented) A method comprising:

2                 receiving, into a capacity planning tool, configuration information for at least one  
3 streaming media server;

4                 receiving, into said capacity planning tool, workload information for a workload  
5 of client accesses of streaming media files from a server;

6                 said capacity planning tool evaluating a capacity of the at least one streaming  
7 media server for supporting the workload;

8                 wherein said evaluating comprises computing a service demand for said at least  
9 one streaming media server supporting said workload; and

10                wherein said computing said service demand comprises computing:

11                
$$Demand = \sum_{i=1}^{K_W} N_{X_{W_i}}^{memory} \times cost_{X_{W_i}}^{memory} + \sum_{i=1}^{K_W} N_{X_{W_i}}^{disk} \times cost_{X_{W_i}}^{disk} ,$$

12                wherein the workload  $W$  comprises  $X_W = X_1, \dots, X_{k_w}$  set of different encoded bit  
13 rates of files served in the workload,  $N_{X_{W_i}}^{memory}$  is a number of streams in the workload having a  
14 memory access to a subset of files encoded at  $X_{W_i}$  Kb/s,  $cost_{X_{W_i}}^{memory}$  is a cost of consumed  
15 resources for a stream having a memory access to a file encoded at  $X_{W_i}$  Kb/s,  $N_{X_{W_i}}^{disk}$  is a number  
16 of streams in the workload having a disk access to a subset of files encoded at  $X_{W_i}$  Kb/s, and  
17  $cost_{X_{W_i}}^{disk}$  is a cost of consumed resources for a stream having a disk access to a file encoded at  
18  $X_{W_i}$  Kb/s .

1           11.     (Original) The method of claim 1 further comprising:

2                 receiving at least one service parameter.

1           12.     (Original) The method of claim 11 wherein said at least one service parameter  
2 comprises information identifying at least one performance criteria desired to be satisfied by said  
3 at least one streaming media server under the workload.

1           13.     (Original) The method of claim 12 wherein said at least one performance criteria  
2 specifies a minimum percentage of time that said at least one streaming media server is desired  
3 to be capable of supporting the workload.

1           14.     (Original) The method of claim 11 wherein said at least one service parameter  
2 comprises information identifying a constraint.

1           15.     (Original) The method of claim 11 wherein said evaluating further comprises:  
2                   evaluating whether said at least one streaming media server satisfies said at least  
3 one service parameter.

1           16.     (Previously Presented) Computer-executable software code stored to a computer-  
2 readable medium, the computer-executable software code comprising:  
3                   code for receiving workload information for a workload of client accesses of  
4 streaming media files from a server; and  
5                   code for employing a cost function derived for at least one system configuration  
6 from a single file benchmark and a unique file benchmark for evaluating a capacity of the at least  
7 one system configuration for supporting the workload.

1           17.     (Original) Computer-executable software code of claim 16 further comprising:  
2                   code for receiving configuration information for said at least one system  
3 configuration.

1           18.     (Original) Computer-executable software code of claim 16 wherein said code for  
2 evaluating a capacity of at least one system configuration for supporting the workload comprises:  
3                   code for determining whether said at least one system configuration is capable of  
4 supporting said workload in accordance with at least one service parameter.

1           19.     (Original) Computer-executable software code of claim 18 wherein said at least  
2     one service parameter comprises information identifying at least one performance criteria desired  
3     to be satisfied by said at least one system configuration under the workload.

1           20.     (Original) Computer-executable software code of claim 16 further comprising:  
2                     code for generating a workload profile for the received workload information.

1           21.     (Original) Computer-executable software code of claim 20 wherein the received  
2     workload information comprises an access log collected over a period of time.

1           22.     (Original) Computer-executable software code of claim 20 wherein said workload  
2     profile comprises:

3                     for a plurality of different points in time, identification of a number of concurrent  
4     client accesses, wherein the number of concurrent client accesses are categorized into  
5     corresponding encoding bit rates of streaming media files accessed thereby and are further sub-  
6     categorized into either memory or disk accesses.

1           23.     (Original) Computer-executable software code of claim 16 wherein said code for  
2     evaluating comprises:  
3                     code for generating a service demand profile for said at least one system  
4     configuration.

1           24.     (Original) Computer-executable software code of claim 16 wherein said code for  
2     evaluating a capacity of at least one system configuration comprises:

3                     code for evaluating a capacity of a plurality of different system configurations and  
4     determining an optima1 one of said plurality of different system configurations for supporting  
5     the workload.

1           25.   (Previously Presented) A system comprising:

2                   means for receiving configuration information for a plurality of different system  
3 configurations, wherein the configuration information comprises, for each of the plurality of  
4 different system configurations, a corresponding single file benchmark and unique file  
5 benchmark, wherein said single file benchmark measures capacity of the corresponding system  
6 configuration for serving a population of clients that all access a same file, wherein said unique  
7 file benchmark measures capacity of the corresponding system configuration for serving a  
8 population of clients that all access different files;

9                   means for receiving workload information for a workload of client accesses of  
10 streaming media files from a server; and

11                  means for evaluating, based on the configuration information, the capacity of each  
12 of said plurality of different system configurations for supporting said workload.

1           26.   (Original) The system of claim 25 further comprising:

2                   means for determining an optimal one of said plurality of different system  
3 configurations for supporting said workload.

1           27.   (Original) The system of claim 26 wherein said means for determining an optimal  
2 one of said plurality of different system configurations for supporting said workload determines a  
3 most cost-effective one of said plurality of different system configurations for supporting said  
4 workload according to determined service parameters.

1           28.     (Previously Presented) A method comprising:

2                 receiving workload information identifying an expected workload of client  
3 accesses of streaming media files from a server over a period of time; and

4                 determining a service demand profile for at least one server configuration under  
5 evaluation for evaluating a capacity of said at least one server configuration for supporting the  
6 expected workload, wherein said service demand profile comprises a plurality of pairs of  
7 information, each pair comprising an identification of a duration of time in said period of time  
8 and a corresponding computed resource cost of the at least one server configuration for serving  
9 the workload over the duration of time.

1           29.     (Original) The method of claim 28 further comprising:

2                 receiving at least one service parameter.

1           30.     (Original) The method of claim 29 wherein said at least one service parameter  
2 comprises information identifying at least one performance criteria desired to be satisfied by said  
3 at least one server configuration under the expected workload.

1           31.     (Original) The method of claim 29 further comprising:

2                 evaluating the determined service demand profile for the at least one server  
3 configuration to determine whether the at least one server configuration satisfies the received at  
4 least one service parameter.

1           32.     (Previously Presented) A system comprising:

2                 a media profiler operable to receive a client access log collected over a period of  
3 time for a service provider's site and generate a workload profile for the service provider's site,  
4 wherein said workload profile comprises, for a plurality of different points in time, identification  
5 of a number of concurrent client accesses, wherein the number of concurrent client accesses are  
6 categorized into corresponding encoding bit rates of streaming media files accessed thereby and  
7 are further sub-categorized into either memory or disk accesses; and

8                 a capacity evaluator operable to receive the generated workload profile and  
9 evaluate at least one server configuration's capacity for supporting the site's workload.

1           33     (Original) The system of claim 32 wherein said capacity evaluator is further  
2 operable to receive configuration information for said at least one server configuration.

1           34.     (Original) The system of claim 32 wherein in evaluating said at least one server  
2 configuration's capacity, said capacity evaluator determines whether said at least one server  
3 configuration is capable of supporting the site's workload in accordance with at least one service  
4 parameter.

1           35.     (Original) The system of claim 34 wherein said at least one service parameter  
2 comprises information identifying at least one performance criteria desired to be satisfied by said  
3 at least one server configuration under the site's workload.

          36.     (Canceled)

1           37.     (Original) The system of claim 32 wherein in evaluating said at least one server  
2 configuration's capacity, said capacity evaluator is operable to generate a service demand profile  
3 for said at least one server configuration.



38. (Previously Presented) The method of claim 1 further comprising:

deriving, by said capacity planning tool, from the single file benchmark and unique file benchmark, a cost function for measuring the capacity of the at least one streaming media server for supporting the workload.

39. (Previously Presented) The method of claim 1 wherein said evaluating comprises computing a service demand for said at least one streaming media server supporting said workload; and

wherein said computing said service demand comprises computing:

$$Demand = \sum_{i=1}^{K_w} N_{X_{w_i}}^{memory} \times cost_{X_{w_i}}^{memory} + \sum_{i=1}^{K_w} N_{X_{w_i}}^{disk} \times cost_{X_{w_i}}^{disk} ,$$

wherein the workload  $W$  comprises  $X_W = X_1, \dots, X_{k_w}$  set of different encoded bit rates of files served in the workload,  $N_{X_{w_i}}^{memory}$  is a number of streams in the workload having a memory access to a subset of files encoded at  $X_{w_i}$  Kb/s,  $cost_{X_{w_i}}^{memory}$  is a cost of consumed resources for a stream having a memory access to a file encoded at  $X_{w_i}$  Kb/s,  $N_{X_{w_i}}^{disk}$  is a number of streams in the workload having a disk access to a subset of files encoded at  $X_{w_i}$  Kb/s, and  $cost_{X_{w_i}}^{disk}$  is a cost of consumed resources for a stream having a disk access to a file encoded at  $X_{w_i}$  Kb/s.

40.-41. (Canceled)

42. (Previously Presented) The method of claim 28 further comprising:

deriving, from a single file benchmark and unique file benchmark of the at least one server configuration, a cost function for computing resource cost of the at least one server configuration; and

employing said cost function for computing the computed resource cost of the at least one server configuration for serving the workload over the duration of time.

1           43.   (Previously Presented) The system of claim 37 wherein said service demand  
2 profile comprises a plurality of pairs of information, each pair comprising identification of a  
3 duration of time in said period of time and a corresponding computed resource cost of the at least  
4 one server configuration for serving the workload over the duration of time.

1           44.   (Previously Presented) A method comprising:  
2               determining results of a single file benchmark for each of a plurality of encoding  
3 bit rates of a single file served by at least a first streaming media server configuration, wherein  
4 the result of the single file benchmark for a given encoding bit rate identifies the maximum  
5 number of concurrent streams of the single file that the at least a first streaming media server  
6 configuration can supply to a population of clients at the given encoding bit rate;

7               determining results of a unique file benchmark for each of said plurality of  
8 encoding bit rates, wherein the result of the unique file benchmark for a given encoding bit rate  
9 identifies the maximum number of concurrent streams of different files that the at least a first  
10 streaming media server configuration can supply to the population of clients at the given  
11 encoding bit rate;

12              deriving, from the results of the single file benchmark and unique file benchmark,  
13 a cost function;

14              receiving, into a capacity planning tool, workload information for a workload of  
15 client accesses of streaming media files from a server; and

16              using, by the capacity planning tool, the cost function for said at least a first  
17 streaming media server configuration for evaluating a capacity of the at least a first streaming  
18 media server configuration for supporting the workload.